

IN THE CLAIMS:

D₁ 1. (Currently Amended) A drive-section-isolated FOUP opener for opening and closing a FOUP door which closes a front opening of a FOUP containing a plurality of semiconductor wafers oriented horizontally and vertically arranged at predetermined intervals, said FOUP opener comprising:

a dock plate for carrying and positioning a FOUP;

a dock moving mechanism for moving said dock plate to a position for detachment and attachment of the FOUP door;

a port door including a detachment/attachment mechanism for detaching and attaching the FOUP door and a holder mechanism for holding the FOUP door;

a port plate having an opening, the opening of said port plate being closed by said port door, said port plate having a clean room side and a FOUP side;

a port door horizontal-movement mechanism for horizontally and linearly moving said port door;

a sensor horizontal-movement mechanism, mounted outside and spaced from said port door, for horizontally and linearly moving a sensor bracket, independently of said port door, between a horizontally extended position within the FOUP and a horizontally retracted position withdrawn from the FOUP, said sensor bracket having a mapping sensor mounted on an upper portion of said sensor bracket and adapted to detect presence/absence, storage condition, and position of wafers contained in the FOUP;

a port-door-and-sensor vertical-movement mechanism for vertically moving said port

door and said sensor bracket with said port door holding the FOUP door; and

a drive for said port door horizontal-movement mechanism, a drive for said sensor horizontal-movement mechanism, and a drive for said port-door-and-sensor vertical-movement mechanism being disposed on the FOUP side of said port plate.

D₁ 2. (Previously Amended) A drive-section-isolated FOUP opener according to Claim 1, wherein said port plate has a vertically elongated guide slit located underneath the opening: and

wherein the drive for said port door horizontal-movement mechanism, the drive for said sensor horizontal-movement mechanism, and the drive for said port-door-and-sensor vertical-movement mechanism move said port door and said sensor bracket horizontally and vertically, via said guide slit.

3. (Original) A drive-section-isolated FOUP opener according to Claim 2, wherein said guide slit is used in common for moving said port door and said sensor bracket.

4. (Previously Amended) A drive-section-isolated FOUP opener according to Claim 1, further comprising a drive section chamber housing the drive for said port door horizontal-movement mechanism, the drive for said sensor horizontal-movement mechanism, and the drive for said port-door-and-sensor vertical-movement mechanism, and

said drive section chamber including a device for exhausting atmosphere from said drive section chamber to an exterior area.

5. (Previously Amended) A drive-section-isolated FOUP opener according to Claim 2, further comprising a drive section chamber housing the drive for said port door horizontal-movement mechanism, the drive for said sensor horizontal-movement mechanism, and the drive for said port-door-and-sensor vertical-movement mechanism, and

said drive section chamber including a device for exhausting atmosphere from said drive section chamber to an exterior area.

D₁ 6. (Previously Amended) A drive-section-isolated FOUP opener according to Claim 3, further comprising a drive section chamber housing the drive for said port door horizontal-movement mechanism, the drive for said sensor horizontal-movement mechanism, and the drive for said port-door-and-sensor vertical-movement mechanism, and

said drive section chamber including a device for exhausting atmosphere from said drive section chamber to an exterior area.

7. (Newly Added) A drive-section-isolated FOUP opener according to Claim 1, wherein said port door horizontal-movement mechanism moves said port door horizontally and linearly between a closed position within said opening of said port plate and an open position spaced from said port plate on the clean room side.

8. (Newly Added) A drive-section-isolated FOUP opener according to Claim 7, wherein said port door horizontal-movement mechanism moves said port door horizontally and linearly independently of said sensor bracket.

9. (Newly Added) A drive-section-isolated FOUP opener according to Claim 1, wherein said port door horizontal-movement mechanism moves said port door horizontally and linearly independently of said sensor bracket.

10. (Newly Added) A drive-section-isolated FOUP opener according to Claim 2, wherein said port door horizontal-movement mechanism moves said port door horizontally and linearly between a closed position within said opening of said port plate and an open position spaced from said port plate on the clean room side.

11. (Newly Added) A drive-section-isolated FOUP opener according to Claim 10, wherein said port door horizontal-movement mechanism moves said port door horizontally and linearly independently of said sensor bracket.

12. (Newly Added) A drive-section-isolated FOUP opener according to Claim 2, wherein said port door horizontal-movement mechanism moves said port door horizontally and linearly independently of said sensor bracket.
